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(54) **MOUNTING STRUCTURE OF BUFFER MEMBER FOR FUEL TANK**

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F16F 1/376 (2006.01)
B60K 15/03 (2006.01)

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CPC ***B60K 15/067*** (2013.01); ***F16F 1/376*** (2013.01); *B60K 2015/03032* (2013.01); *B60K 2015/03039* (2013.01); *B60K 2015/03046* (2013.01); *B60K 2015/03052* (2013.01); *B60K 2015/03059* (2013.01); *B60K 2015/03065* (2013.01); *F16F 2230/0005* (2013.01); *Y10T 403/45* (2015.01)

(58) **Field of Classification Search**
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USPC 280/834; 403/224, 227, 228; 267/139, 267/140; 220/562; 137/354
See application file for complete search history.

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(57) **ABSTRACT**

A mounting structure wherein a buffer member has a body portion, and a leg portion which is extended from the body portion and engaged with a recess, wherein the body portion has a plurality of first convex portions which are arranged around a center axis of the body portion at regular intervals and abut against a vehicle body, a plurality of first concave portions each of which is formed between the adjacent first convex portions, a plurality of second convex portions which are arranged around the center axis of the body portion **61** at regular intervals and abut the fuel tank, and a plurality of second concave portions each of which is formed between the adjacent second convex portions, and wherein the first convex portion is formed corresponding to the second concave portion, and the second convex portion is formed corresponding to the first concave portion, is provided.

6 Claims, 8 Drawing Sheets

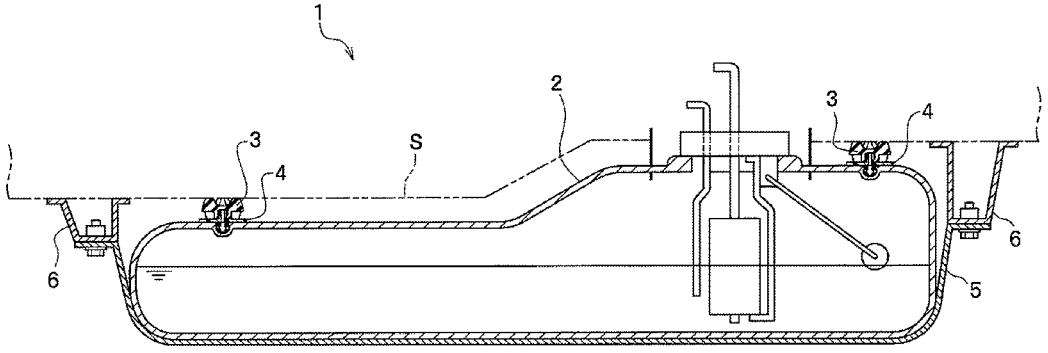

FIG. 1

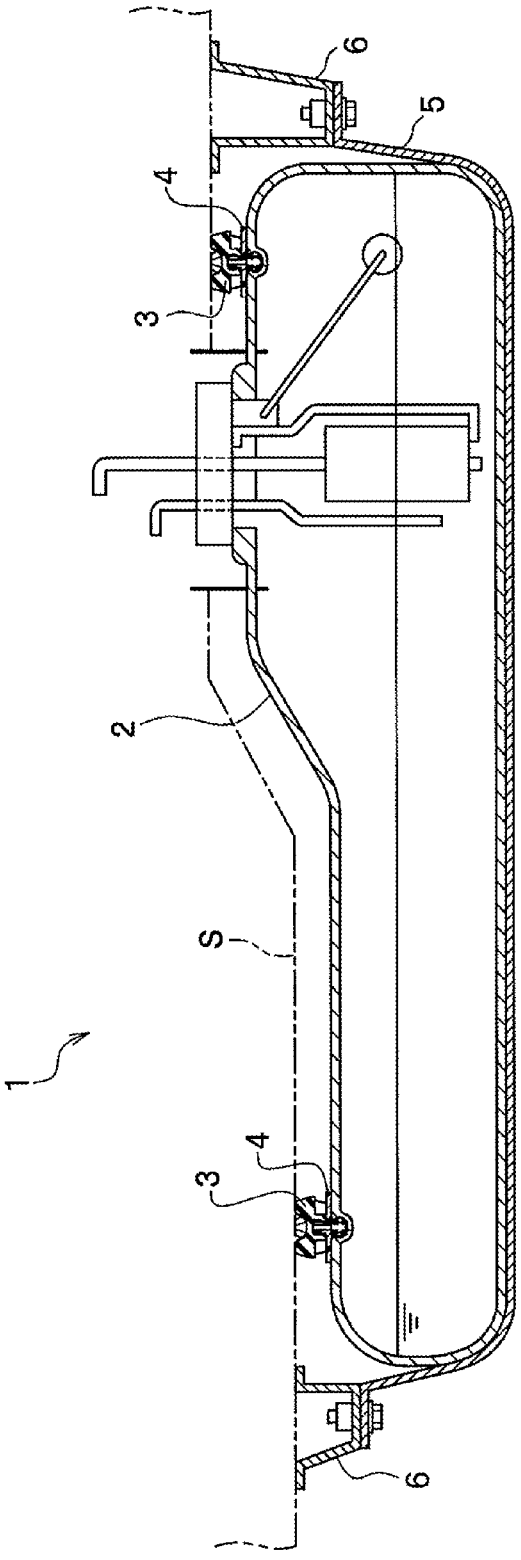

FIG. 2

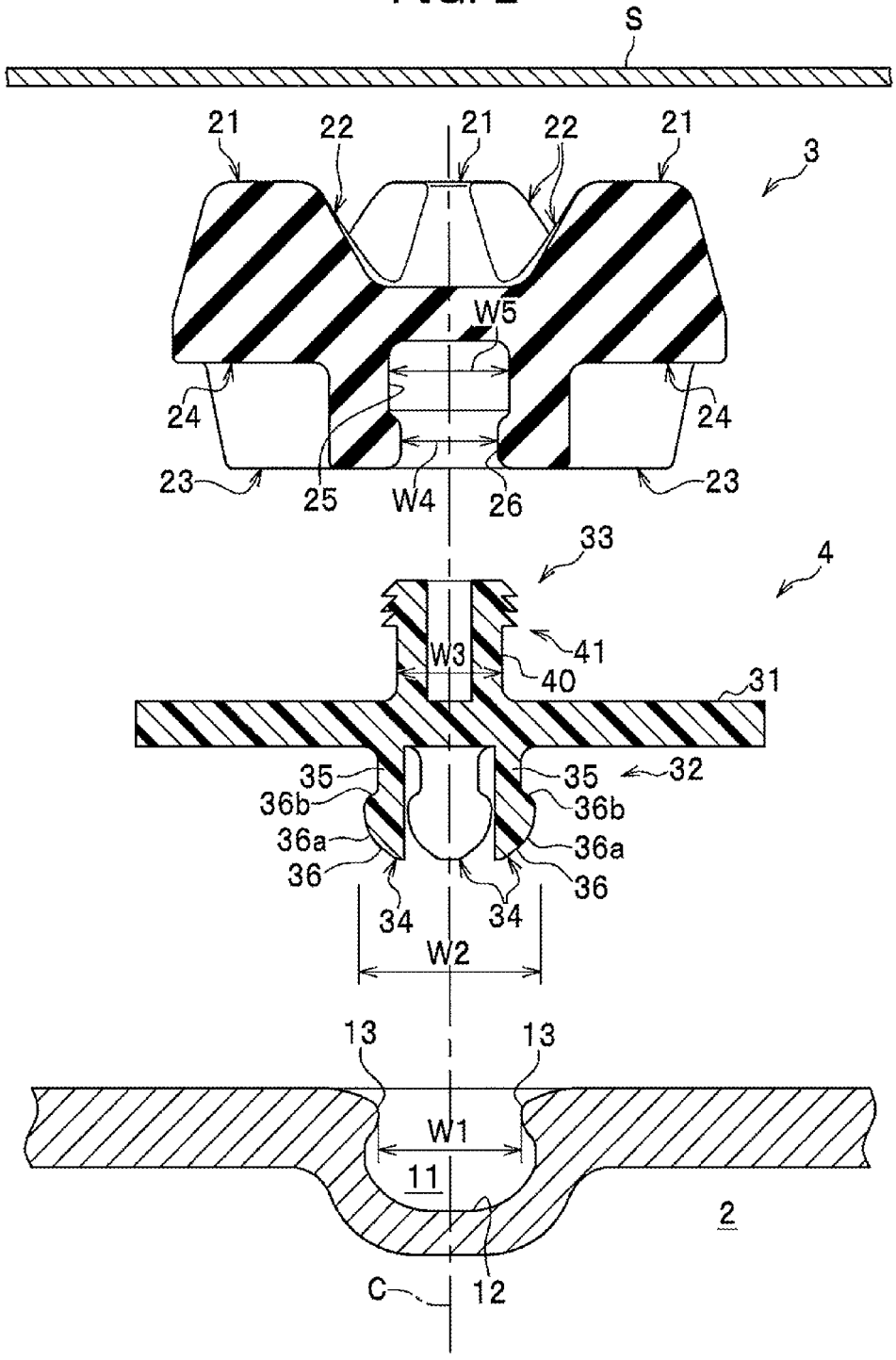
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FIG. 3

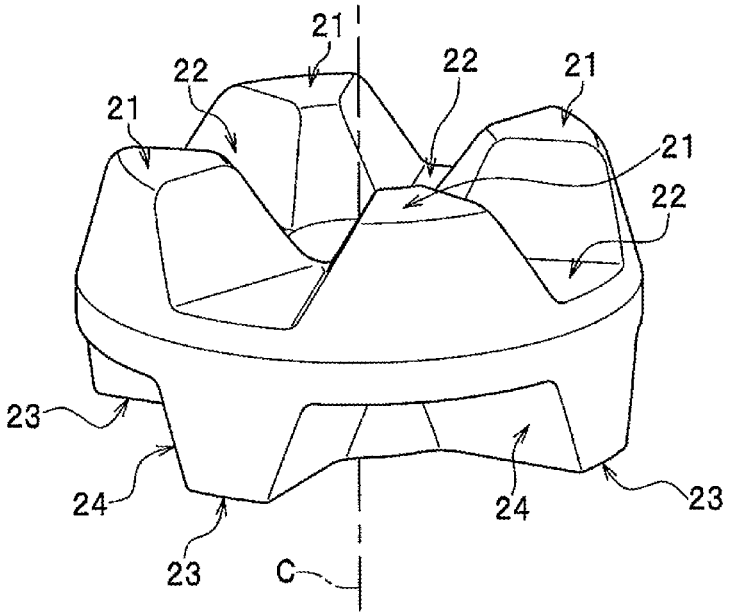


FIG. 4

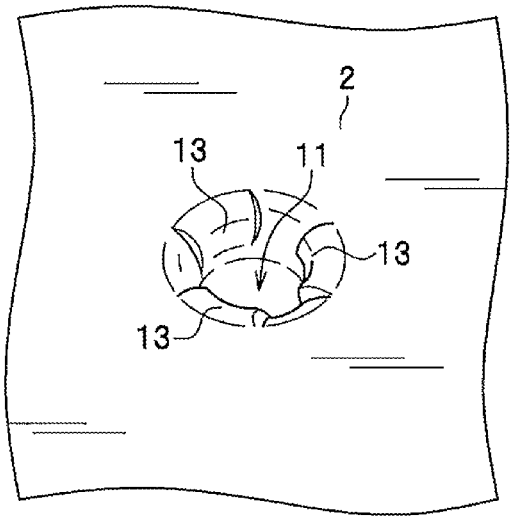


FIG. 5

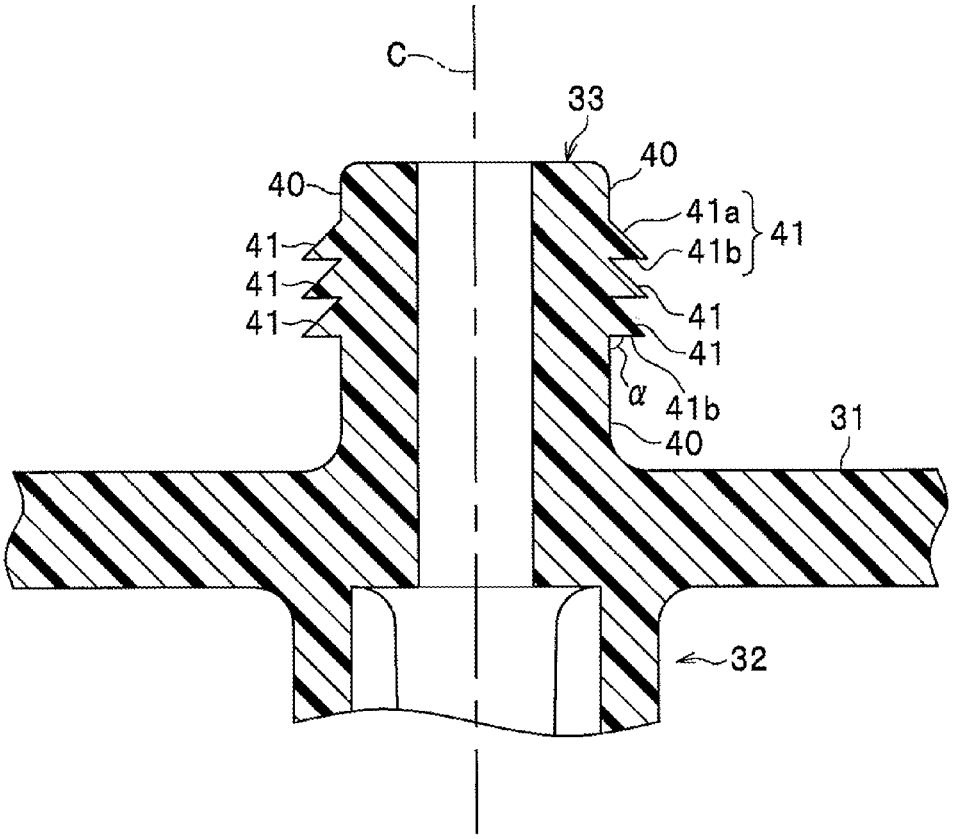
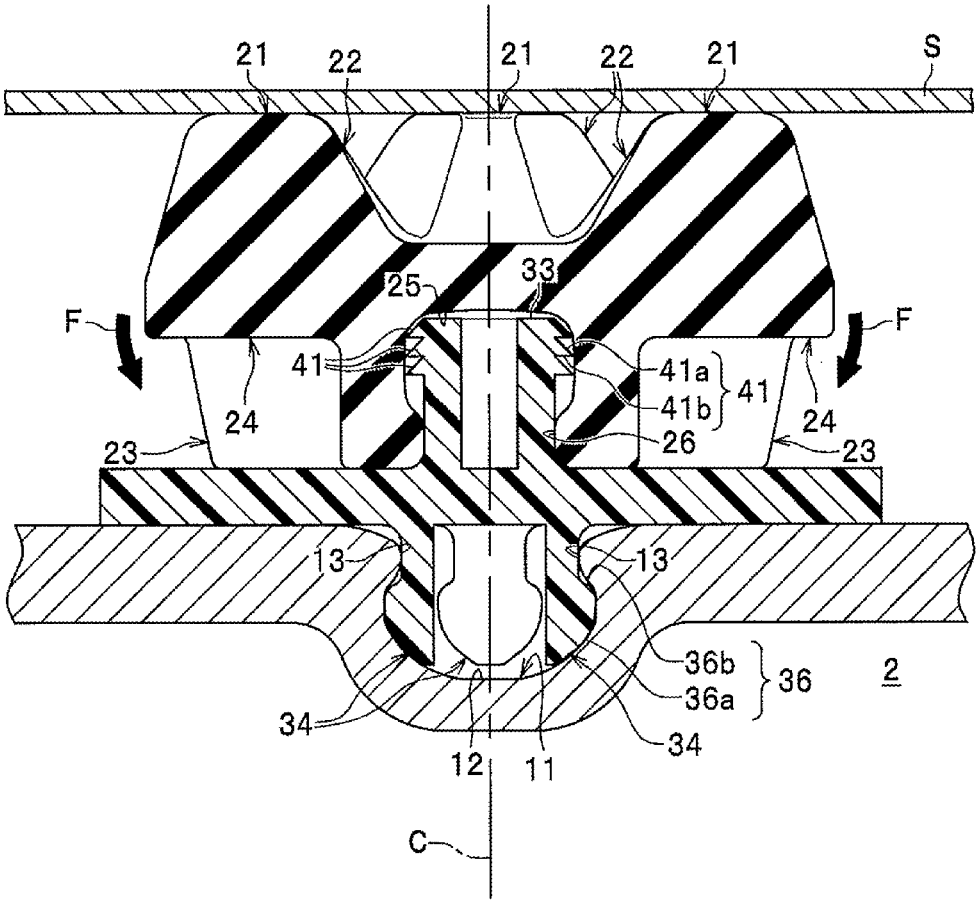


FIG. 6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36b
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FIG. 7

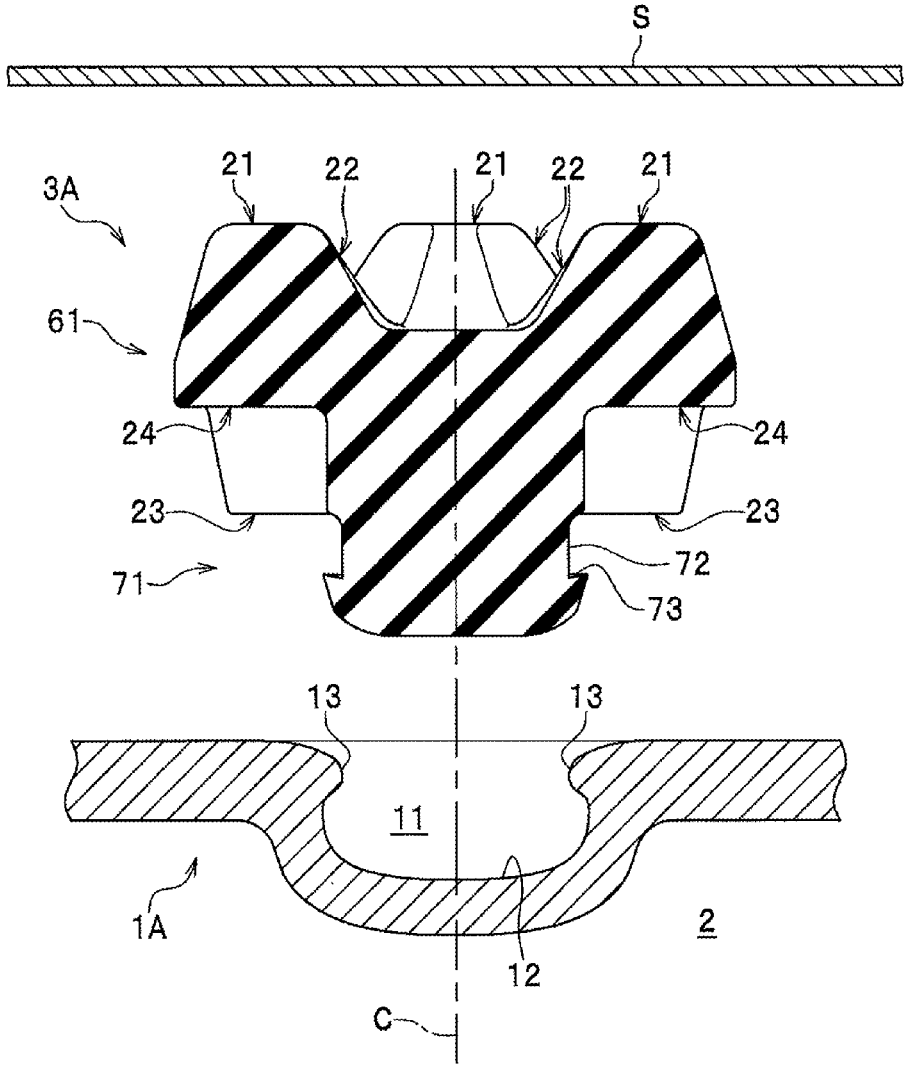


FIG. 8

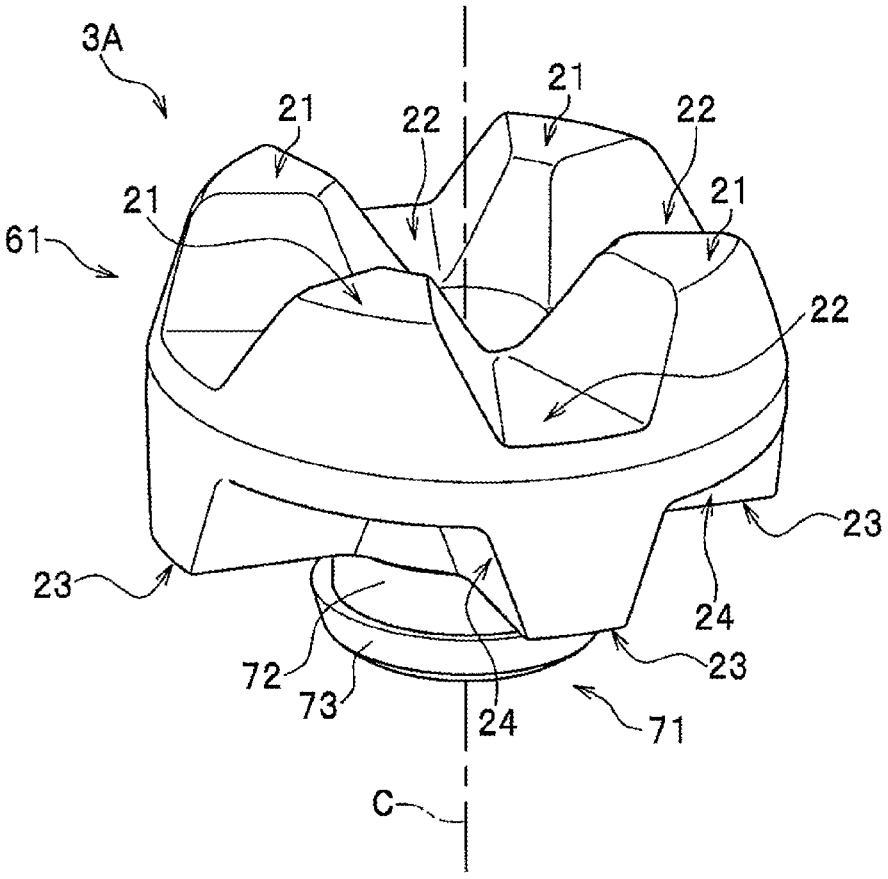
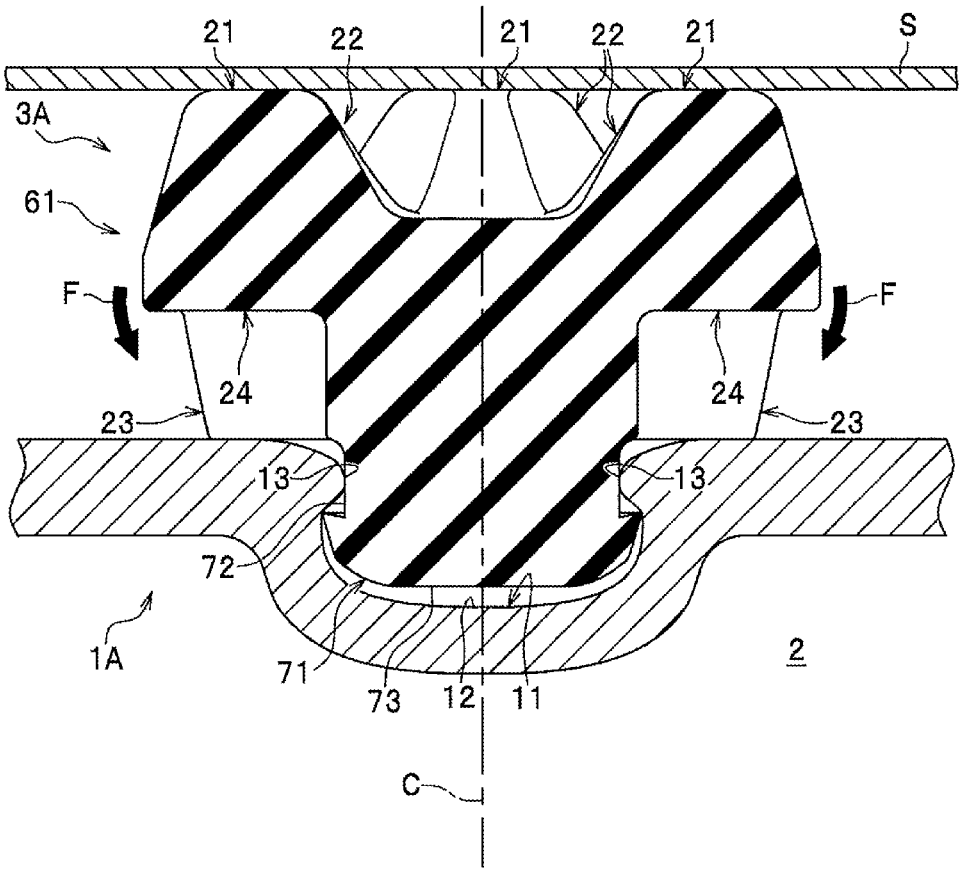


FIG. 9



MOUNTING STRUCTURE OF BUFFER MEMBER FOR FUEL TANK

CROSS REFERENCE TO RELATED APPLICATION

The present application claims benefit of the filing date of Japanese Patent Application No. 2011-043575 filed on Mar. 1, 2011 which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a mounting structure of a buffer member installed between a fuel tank for a vehicle and a vehicle body.

2. Description of the Related Art

Conventionally, a technique for installing a buffer member such as a rubber, etc. between a fuel tank for a vehicle and a floor panel of a vehicle body has been well known. By installing the buffer member between the fuel tank and the floor panel, the fuel tank is prevented from striking against the floor panel, and vibration and noise caused by ruffles of fuel in the fuel tank, etc. is prevented from being transmitted to the vehicle body. For example, JP 05-089060 Y discloses that an adhesive layer is provided between a fuel tank and a floor panel when a buffer member is installed. Also, JP 05-089060 Y discloses that a double-faced tape may be used instead of the adhesive.

However, in adhesion by the adhesive or the double-faced tape, there arises a problem that a plasticizer contained in the buffer member is drawn to an adhesive interface as time passes and an adhesive strength is lowered. Also, since the adhesive strength of the buffer member depends on a strength of pressure to press the buffer member, a stable adhesive strength can not be obtained. Also, since the buffer member can not be removed easily once it is adhered, high accuracy is required at the time of assembling. For this reason, there arises a problem that a large burden is imposed on a worker. Also, since a buffer member of the prior art shows an approximately tabular appearance, it has a poor cushion feature.

The present invention aims to solve the above problems. Therefore, an object of the present invention is to provide a mounting structure of a buffer member for a fuel tank, which mounting structure provides good cushion feature, prevents degradation in a connection strength caused by age degradation, and has improved mounting characteristics.

SUMMARY OF THE INVENTION

In order to achieve the above object, the present invention provides a mounting structure, comprising: a fuel tank whose surface has a recess; and a buffer member installed between a vehicle body and the fuel tank, wherein the buffer member comprises: a body portion; and a leg portion which is extended from the body portion and engaged with the recess, wherein the body portion comprises: a plurality of first convex portions which are arranged around a center axis of the body portion at regular intervals and project toward the vehicle body; a plurality of first concave portions formed among the adjacent first convex portions; a plurality of second convex portions which are arranged around a center axis of the body portion at regular intervals and project toward the fuel tank; a plurality of second concave portions formed among the adjacent second convex portions, wherein the first convex portion is formed at a position so as to correspond to the second concave portion and the second convex portion is formed at another position so as to correspond to the second concave portion in a direction which is parallel to the center axis of the body portion.

According to the above structure, since the first convex portion is pushed into the second concave portion and the second convex portion is pushed into the first concave portion when an external force is applied to the buffer member, the cushion feature can be improved. Also, since the leg portion is engaged with the recess, degradation of adhesive, etc. does not affect a connection strength and degradation in a connection strength caused by age degradation can be prevented. Also, the buffer member can be mounted to the fuel tank easily and stably by only pushing the leg portion of the buffer member into the recess.

Also, the present invention provides a mounting structure, comprising: a fuel tank whose surface has a recess; a buffer member installed between a vehicle body and the fuel tank; and a clip for connecting the fuel tank to the buffer member, wherein the buffer member comprises: a hole formed at a bottom thereof; a plurality of first convex portions which are arranged around a center axis of the buffer member at regular intervals and project toward the vehicle body; a plurality of first concave portions which are formed among the adjacent first convex portions; a plurality of second convex portions which are arranged around the center axis of the buffer member at regular intervals and project toward the clip; a plurality of second concave portions which are formed among the adjacent second convex portions, wherein the first convex portion is formed at a position so as to correspond to the second concave portion and the second convex portion is formed at another position so as to correspond to the second concave portion in a direction which is parallel to the center axis of the buffer member, the clip comprises: a substrate portion which abuts against the second convex portion; a leg portion which is formed on the substrate portion and engaged with the recess; and a head portion which is formed on the substrate portion at the opposite side to the leg portion and engaged with the hole, wherein a removal proof edge which projects outwardly is formed on a outer surface of the head portion.

According to the above structure, since the first convex portion is pushed into the second concave portion and the second convex portion is pushed into the first concave portion when an external force is applied to the buffer member, the cushion feature can be improved. Also, since the buffer member is mounted to the fuel tank via the clip, degradation of adhesive, etc. does not affect a connection strength and degradation in a connection strength caused by age degradation can be prevented. Also, since the removal proof edge is formed on the head portion of the clip, a connection strength between the clip and the buffer member can be improved. Also, the buffer member can be mounted to the fuel tank easily and stably by only pushing the buffer member and the clip into the recess of the fuel tank.

Also, a projection portion which projects toward a center of an opening of the recess is preferably formed in the recess. According to the above structure, a connection strength between the projection portion and the leg portion can be improved.

Also, the removal proof edge preferably comprises: an inclined surface which inclines toward the substrate portion as it becomes apart from a center axis of the head portion; and a barb surface which is extended from the outer surface of the head portion to a tip of the inclined surface and serves as a barb. According to the above structure, the buffer member can be engaged with the clip easily, and the buffer member can

hardly be removed from the clip by virtue of the barb surface once the engagement is established.

Also, a salient which projects toward a center of an opening of the hole is preferably formed in the hole. According to the above structure, a connection strength between the hole and the head portion of the clip can be improved.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a full sectional side view of an amounting structure according to a first embodiment;

FIG. **2** is an exploded sectional side view of the mounting structure according to the first embodiment;

FIG. **3** is a perspective view of a buffer member according to the first embodiment;

FIG. **4** is a perspective view of a recess of a fuel tank according to the first embodiment;

FIG. **5** is an enlarged sectional side view of a clip according to the first embodiment;

FIG. **6** is a sectional side view the mounting structure according to the first embodiment;

FIG. **7** is an exploded sectional side view of a mounting structure according to a second embodiment;

FIG. **8** is a perspective view of a buffer member according to the second embodiment; and

FIG. **9** is a sectional side view of a mounting structure according to the second embodiment.

DESCRIPTION OF PREFERRED EMBODIMENTS

First Embodiment

With reference to drawings, a first embodiment of the present invention will be explained in detail. As shown in FIG. **1**, a mounting structure **1** according to this embodiment relates to a mounting structure of a buffer member **3** installed between a fuel tank **2** and a vehicle body S of a vehicle. The mounting structure **1** mainly comprises: the fuel tank **2**; the buffer member **3**; and a clip **4**.

The fuel tank **2** is a hollow container made of resin or metal for storing fuel, and is fixed to a bottom (a floor panel) of the vehicle body S. In this embodiment, a bottom of the fuel tank **2** is supported by a U-shaped tank band **5**, and both ends of the tank band **5** is fixed to the vehicle body S via brackets **6**, **6**.

As shown in FIGS. **2** and **4**, a recess **11** is formed on a surface of the fuel tank **2**. A leg portion **32** of the clip **4** is engaged with the recess **11**. In this embodiment, the recess **11** is formed on the surface opposite to the vehicle body S of the fuel tank **2**. The recess **11** has a roundly hollowed bottom **12**, and a projection portion **13** which projects toward a center of an opening. The number of the projection portion **13** is not limited, but three projection portions **13** are formed at regular intervals in this embodiment.

As shown in FIGS. **2** and **3**, the buffer member **3** is installed between the fuel tank **2** and the vehicle body S. The material of the buffer member **3** is not limited, but the buffer member **3** is made of a rubber in this embodiment. The buffer member **3** prevents a collision of the fuel tank **2** with the vehicle body S, and prevents vibration and noise caused by ruffles of fuel in the fuel tank, etc. from being transmitted to the vehicle body.

The buffer member **3** is configured to be round in a plan view, and has a first convex portion **21**, a first concave portion **22**, a second convex portion **23**, and a second concave portion **24**.

The first convex portion **21** is a portion which projects toward the vehicle body S. Four first convex portions **21** are formed around a center axis C at regular intervals. Each of the first convex portions **21** has the same configuration. The first convex portion **21** abuts against the vehicle body S, is configured to be approximately trapezoid in a sectional view, and gradually narrows toward a top (i.e., toward the vehicle body S). Four first convex portions **21** are formed in this embodiment, but any number of the first convex portions **21** may be formed as far as the number is equal to or greater than two. Also, the configuration of the first convex portion **21** is not limited.

The first concave portion **22** is a portion which is formed between the adjacent first convex portions **21**. The first concave portions **22** are formed around the center axis C at regular intervals. Each of the first concave portions **22** has the same configuration. Four first concave portions **22** are formed corresponding to the first convex portions **21**.

The second convex portion **23** is a portion which projects toward the clip **4**. Four second convex portions **23** are formed around the center axis C at regular intervals. Each of the second convex portions **23** has the same configuration. The second convex portion **23** abuts against the clip **4**, is configured to be approximately trapezoid in a sectional view, and gradually narrows toward a top (i.e., toward the clip **4**). Four second convex portions **23** are formed in this embodiment, but any number of the second convex portions **23** may be formed as far as the number is equal to or greater than two. Also, the configuration of the second convex portion **23** is not limited.

The second concave portion **24** is a portion which is formed between the adjacent second convex portions **23**. The second concave portions **24** are formed around the center axis C at regular intervals. Each of the second concave portions **24** has the same configuration. Four second concave portions **24** are formed corresponding to the second convex portions **23**.

As shown in FIG. **3**, in a direction parallel to the center axis C (i.e., in the vertical direction in FIG. **3**), the first convex portion **21** is formed corresponding to the second concave portion **24**. Also, the second convex portion **23** is formed corresponding to the first concave portion **22**.

As shown in FIG. **2**, a hole **25** is formed at a center of the bottom of the buffer member **3**. A head portion **33** (described later) of the clip **4** is inserted into the hole **25**. The configuration of the hole **25** is made to be columnar to conform to that of the head portion **33**. A salient **26** which projects toward a center of an opening of the hole **25** is provided. The salient **26** is formed along the circumference of the opening of the hole **25**. In addition, the salient **26** may be provided if necessary.

As shown in FIG. **2**, the clip **4** is a resinous member for connecting the buffer member **3** to the fuel tank **2**. The clip **4** mainly comprises: a substrate portion **31**; the leg portion **32**; and the head portion **33**.

The substrate portion **31** is configured to be a disk shape, and has a diameter which is larger than that of the buffer member **3**. The configuration of the substrate portion **31** may be a polygonal disk. One side of the substrate portion **31** (a top surface of the substrate portion **31** in FIG. **2**) abuts against the second convex portion **23**. The leg portion **32** is extended from the substrate portion **31** toward the fuel tank **2**, and is engaged with the recess **11**. In this embodiment, the leg portion **32** comprises four engagement pieces **34** (three engagement pieces **34** are drawn in FIG. **2**). Each of the four engagement pieces **34** has the same configuration, and formed around the center axis C at regular intervals. Since the four engagement pieces **34** have free ends, ends thereof can be elastically deformed in a horizontal direction.

The engagement piece **34** has a base end portion **35** which is extended from the substrate portion **31**, and an elastic

engagement portion **36** which is formed at an end of the base end portion **35**. The elastic engagement portion **36** has a tapered portion **36***a* which is inclined upward (i.e., toward the substrate portion **31**) as the tapered portion **36***a* becomes apart from the center axis C, and a horizontal portion **36***b* which is extended outwardly from the base end portion **35**.

The head portion **33** is provided upright at a center of the substrate portion **31** on the opposite side to the leg portion **32**. The head portion **33** is inserted into the hole **25** of the buffer member **3**. The head portion **33** is configured to be cylindrical, and a removal proof edge **41** is formed on a outer surface **40**. Three removal proof edges **41** are formed at an upper end of the head portion **33**.

As shown in FIG. **5**, the removal proof edge **41** is configured to be triangle in a sectional view, and is formed along the circumference of the head portion **33**. The removal proof edge **41** comprises: an inclined surface **41***a* which is extended from the outer surface **40** of the head portion **33**; and a barb surface **41***b* which is extended from the outer surface **40**. The inclined surface **41***a* is inclined downward (i.e., toward the substrate portion **31**) on the outer surface **40** as the inclined surface **41***a* becomes apart from the center axis C. The barb surface **41***b* is approximately perpendicular to the outer surface **40**, and is extended to a tip of the inclined surface **41***a*. An angle α between the outer surface **40** and the barb surface **41***b* is preferably equal to or less than 90 degrees.

Three removal proof edges **41** are formed in this embodiment, but any number of the removal proof edges **41** may be formed. Also, the removal proof edge **41** is configured to be triangle in a sectional view in this embodiment, but the configuration of the removal proof edge **41** is not limited as far as the buffer member **3** can hardly be removed from the head portion **33**.

As shown in FIG. **2**, a distance W1 between the projection portions **13**, **13** of the recess **11** is less than an external diameter W2 (normal condition) of the leg portion **32**. Also, an external diameter W3 of the head portion **33** is approximately equal to a distance W4 between the salient **26**, **26** of the hole **25**. An internal diameter W5 of the hole **25** is slightly greater than the distance W4 between the salient **26**, **26**.

First, when the buffer member **3** and the clip **4** are mounted to the fuel tank **2**, the head portion **33** of the clip **4** is pushed into the hole **25** of the buffer member **3**. Next, the leg portion **32** of the clip **4** is pushed into the recess **11** of the fuel tank **2**. As a result, the buffer member **3** can be mounted to the fuel tank **2**.

According to the mounting structure **1** of this embodiment, as shown in FIG. **3**, the first convex portion **21** is formed so as to correspond to the second concave portion **24** in the vertical direction, and the second convex portion **23** is formed so as to correspond to the first concave portion **22** is the vertical direction. As a result, when an external force having a vertical component is applied to the buffer member, the cushion feature can be improved since the first convex portion **21** is pushed into the second concave portion **24** and the second convex portion **23** is pushed into the first concave portion **22**. For example, as shown by an arrow F in FIG. **6**, when an external force having a vertical component is applied to the buffer member **3**, the first convex portion **21** is bent toward the second concave portion **24**. Likewise, the second convex portion **23** is bent toward the first concave portion **22**. For this reason, the cushion feature of the buffer member **3** can be improved.

Also, the buffer member **3** is configured to be round in a plan view, and the same number of the first convex portion **21**, the first concave portion **22**, the second convex portion **23**, and the second concave portion **24** are formed on the same circle at regular intervals. Therefore, an anisotropy can be omitted when the external force is applied.

Also, since the buffer member **3** is mounted to the fuel tank via the clip **4**, degradation of adhesive, etc. does not affect a connection strength and degradation in a connection strength caused by age degradation can be prevented. Also, the buffer member **3** can be mounted to the fuel tank **2** easily and stably by only pushing the buffer member and the clip **4** into the recess **11** of the fuel tank **2**.

Also, since the projection portion **13** which projects toward the center of the opening of the recess **11** is formed in the recess **11**, a connection strength between the projection portion **13** and the leg portion **32** of the clip **4** can be improved.

Also, the end (the engagement piece **34**) of the leg portion **32** is formed to be elastically deformed, and the elastic engagement portion **36** is formed at the end of the leg portion **32** so as to be engaged with the projection portion **13**. For this reason, when the leg portion **32** is inserted into the recess **11**, the engagement piece **34** of the leg portion **32** is pushed by the projection portion **13**, the external diameter W2 of the leg portion **32** is decreased, and a biasing force is applied from the center to the outward after passing through the projection portion **13**. For this reason, the elastic engagement portion **36** of the leg portion **32** is firmly engaged with the projection portion **13** of the recess **11**, and the connection strength can be improved.

Also, since the elastic engagement portion **36** has the tapered portion **36***a*, the elastic engagement portion **36** can be pushed into the recess **11** smoothly. Also, since the elastic engagement portion **36** has the horizontal portion **36***b*, once the elastic engagement portion **36** is engaged with the projection portion **13** of the recess **11**, the elastic engagement portion **36** can hardly be removed from the projection portion **13** even if a force is applied upward. For this reason, the connection strength between the recess **11** and the clip **4** can be improved.

Also, since the head portion **33** is provided with the removal proof edge **41** in this embodiment, the buffer member **3** can be mounted to the clip **4** smoothly by the inclined surface **41***a*. Once the buffer member **3** is mounted to the clip **4**, the buffer member **3** can hardly be removed from the clip **4** by virtue of the barb surface **41***b*. For this reason, the connection strength between the buffer member **3** and the clip can be improved.

Also, according to this embodiment, the buffer member **3** and the clip **4** can be mounted to the fuel tank **2** again. Also, the buffer member **3** can be removed from the clip **4**, they can be reused easily. Also, when the leg portion **32** is engaged with the projection portion **13** of the recess **11** by pushing the buffer member **3** and the clip **4** into the recess **11**, sound and vibration are caused by an elastic deformation of the leg portion **32** (i.e., the engagement piece **34**). For this reason, a worker can confirm that the clip **4** is surely engaged with the recess **11**.

Although the first embodiment of the present invention has been explained, various changes and modifications can be made without departing from the sprit of the present invention. For example, although the leg portion **32** of the clip **4** is divided into four pieces in this embodiment, it may be divided into any other number or may not divided. Also, the number and interval of the removal proof edge **41** may appropriately be determined. The configuration of the buffer member **3** may be other configuration.

Second Embodiment

Next, a second embodiment of the present invention will be explained. As shown in FIG. **7**, a mounting structure **1**A

according to the second embodiment mainly comprises: a fuel tank **2**; and a buffer member **3**A. The mounting structure **1**A according to the second embodiment differs from that according to the first embodiment in that the mounting structure **1**A does not comprises a clip. With respect to the fuel tank **2**, since it is the same as that of the first embodiment, detailed explanation will be omitted.

As shown in FIG. **7**, the buffer member **3**A is made of a rubber, and installed between the fuel tank **2** and the vehicle body S. The buffer member **3**A has a body portion **61**, and a leg portion **71** which is extended from the body portion **61** toward a recess **11**. In this embodiment, the buffer member **3**A is integrally molded.

As shown in FIGS. **7** and **8**, the body portion **61** is configured to be round in a plan view, and has a first convex portion **21**, a first concave portion **22**, a second convex portion **23**, and a second concave portion **24**. The body portion **61** has a structure which is similar to that of the buffer member **3** of the first embodiment except that a hole **25** is not formed.

The leg portion **71** projects from a bottom of the body portion **61** toward the recess **11** (i.e., downward in FIG. **8**). The leg portion **71** has an axial base portion **72** having a constant external diameter, and an extended diameter portion **73** which is formed at the end of the axial base portion **72**. The extended diameter portion **73** has an external diameter which is larger than that of the axial base portion **72**, and is engaged with a projection portion **13** of the recess **11**. The end of the extended diameter portion **73** is configured to be approximately spherical.

When the buffer member **3**A is mounted to the fuel tank **2**, the leg portion **71** of the buffer member **3**A is pushed into the recess **11** of the fuel tank **2** so that the extended diameter portion **73** of the leg portion **71** is engaged with the projection portion **13** of the recess **11**. As a result, the buffer member **3**A can be mounted to the fuel tank **2**.

According to the mounting structure **1**A of this embodiment, as shown in FIG. **8**, the first convex portion **21** is formed so as to correspond to the second concave portion **24** in the vertical direction, and the second convex portion **23** is formed so as to correspond to the first concave portion **22** in the vertical direction. As a result, when an external force having a vertical component is applied to the buffer member **3**A, a cushion feature can be improved since the first convex portion **21** is pushed into the second concave portion **24** and the second convex portion **23** is pushed into the first concave portion **22**. For example, as shown by an arrow F in FIG. **9**, when an external force having a vertical component is applied to the buffer member **3**A, the first convex portion **21** is bent toward the second concave portion **24**. Likewise, the second convex portion **23** is bent toward the first concave portion **22**. For this reason, the cushion feature of the buffer member **3**A can be improved.

Also, since the buffer member **3**A is mounted to the fuel tank **2** via the leg portion **71**, degradation of adhesive, etc. does not affect a connection strength and degradation in a connection strength caused by age degradation can be prevented. Also, the buffer member **3**A can be mounted to the fuel tank **2** easily and stably by only pushing the leg portion **71** of the buffer member **3**A into the recess **11** of the fuel tank **2**. Also, since the extended diameter portion **73** is engaged with the projection portion **13**, once the buffer member **3**A is mounted to the fuel tank **2**, the buffer member **3**A can hardly be removed from the fuel tank **2**. Also, since the buffer member **3**A is made by integrally molding, the buffer member **3**A can be made easily.

Although the second embodiment of the present invention has been explained, various changes and modifications can be made without departing from the sprit of the present invention. For example, although the buffer member **3**A is made by integrally molding in this embodiment, the body portion **61** and the leg portion **71** may be molded separately and may be integrated later. Also, although the buffer member **3**A (the body portion **61**) is configured to be round in a plan view in this embodiment, it may be configured to be polygonal in a plain view.

What is claimed is:

1. A mounting structure, comprising:
- a fuel tank whose surface has a recess; and
- a buffer member installed between a vehicle body and the fuel tank, wherein
- the buffer member is made of rubber, is pressed down from above the recess to be engaged with the recess, and comprises:
- a body portion; and
- a leg portion which is extended from the body portion and is engaged with the recess, the body portion and the leg portion being integrally molded, wherein
- the body portion comprises:
  - a plurality of first convex portions which are arranged around a center axis of the body portion at regular intervals to project toward the vehicle body and directly abut against the vehicle body;
  - a plurality of first concave portions formed among the adjacent first convex portions;
  - a plurality of second convex portions which are arranged around a center axis of the body portion at regular intervals to project toward the fuel tank and directly abut against the fuel tank; and
  - a plurality of second concave portions formed among the adjacent second convex portions, wherein
  - the first convex portion is formed at a position so as to correspond to the second concave portion and the second convex portion is formed at another position so as to correspond to the first concave portion in a direction which is parallel to the center axis of the body portion.

2. The mounting structure according to claim **1**, wherein a projection portion which projects toward a center of an opening of the recess is formed in the recess.

3. A mounting structure, comprising:
- a fuel tank whose surface has a recess;
- a buffer member installed between a vehicle body and the fuel tank; and
- a clip for connecting the fuel tank to the buffer member, wherein
- the buffer member comprises:
  - a hole formed at a bottom thereof;
  - a plurality of first convex portions which are arranged around a center axis of the buffer member at regular intervals and project toward the vehicle body;
  - a plurality of first concave portions which are formed among the adjacent first convex portions;
  - a plurality of second convex portions which are arranged around the center axis of the buffer member at regular intervals and project toward the clip;
  - a plurality of second concave portions which are formed among the adjacent second convex portions, wherein
  - the first convex portion is formed at a position so as to correspond to the second concave portion and the second convex portion is formed at another position so as to correspond to the first concave portion in a direction which is parallel to the center axis of the buffer member,

the clip comprises:

a substrate portion which abuts against the second convex portion;

a leg portion which is formed on the substrate portion and engaged with the recess; and

a head portion which is formed on the substrate portion at the opposite side to the leg portion and engaged with the hole, wherein

a removal proof edge which projects outwardly is formed on an outer surface of the head portion.

4. The mounting structure according to claim **3**, wherein a projection portion which projects toward a center of an opening of the recess is formed in the recess.

5. The mounting structure according to claim **3**, wherein the removal proof edge comprises:

an inclined surface which inclines toward the substrate portion as it becomes apart from a center axis of the head portion; and

a barb surface which is extended from the outer surface of the head portion to a tip of the inclined surface and serves as a barb.

6. The mounting structure according to claim **3**, wherein a salient which projects toward a center of an opening of the hole is formed in the hole.

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